

What is claimed is:

1. A working end of a surgical probe for delivering energy to tissue, comprising:

a member defining an engagement plane for engaging tissue and delivering energy to tissue;

5 a medial portion comprising a material that is variably resistive, said medial portion extending inwardly from said engagement plane; and

an interior conductive portion at an interior of the member coupled to said medial conductive portion.

10 2. The working end of Claim 1 further comprising an electrical source operatively coupled to said interior conductive portion.

3. The working end of Claim 1 wherein said engagement surface is an exterior of said medial portion.

15 4. The working end of Claim 1 wherein the medial portion has an electrical resistance that increases with an increase in temperature thereof.

5. The working end of Claim 1 wherein the medial portion has an electrical resistance that decreases with an increase in temperature thereof.

20 6. The working end of Claim 5 wherein the medial portion defines a switching range at which its electrical resistance substantially increases or decreases in a selected temperature range.

7. The working end of Claim 6 wherein said switching range falls between about 40° C. and 200° C.

8. The working end of Claim 1 wherein the medial portion is a ceramic material.

9. The working end of Claim 1 wherein the conductive portion is a flexible material.

10. The working end of Claim 1 wherein the medial portion is of a compressible material.

11. The working end of Claim 10 wherein the medial portion comprises a silicone polymer doped with a conductive composition.

12. The working end of Claim 10 wherein the medial portion varies in resistance in response to pressure applied thereto.

13. The working end of Claim 1 wherein the engagement plane carries a thin-film metallic coating.

14. The working end of Claim 1 wherein said engagement plane extends 360° about the surface of the member.

15. The working end of Claim 1 wherein said engagement plane extends about only a portion of the member.

16. A method for controlled application of energy to a targeted tissue, comprising the steps of:

providing a probe with a working end having a surface engagement portion, a variably
resistive portion, and at least one conductive portion coupled to a voltage source;

positioning said surface engagement portion in contact with the targeted tissue; and

delivering Rf energy to said at least one conductive portion wherein energy application to said
tissue is modulated by changes in resistance of said variably resistive portion.

17. The method of Claim 16 wherein the variably resistive portion defines a switching range in which
its resistivity is altered substantially at a selected temperature, and the delivering step comprises the step of reducing or
eliminating Rf heating of tissue in any time interval that said variably resistive portion is at or above said switching
range.

18. The method of Claim 16 further comprising the step of applying energy to the targeted tissue by
means of conduction of heat through the engagement surface portion from said variably resistive and conductive
portions.

19. The method of Claim 16 wherein the variably resistive portion defines a switching range in which
its resistivity is altered substantially at a selected temperature, and the delivering step comprises the step of increasing Rf
heating of tissue in any time interval that said variably resistive portion is at or above said switching range.